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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,051	02/26/2004	Kenzo Nonami	K-2151	5183

7590 02/09/2005

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Alexandria, VA 22314

EXAMINER
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ELDRED, JOHN W

ART UNIT	PAPER NUMBER
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3644

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/786,051

Applicant(s)

NONAMI ET AL

Examiner

J. Woodrow Eldred

Art Unit

3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

All equations in all claims are indefinite, since none of the variables are defined in the claims.

In each of claims 1-6, the following terms are indefinite. In line 2, "the attitude angle" is vague and indefinite since it is not clear what attitude is being measured. In line 3, "position or velocity" is alternative and indefinite. In each of these claims "the ground station", "the servo motors", "the current position and attitude angle", "said sensors", and "said computational processing results" each fails to have antecedent basis in the claims. In lines 5-6, "a number" is vague and indefinite since it is unclear if the number is zero, one, or a plurality. In line 9-10, the "or" is alternative and it is not even clear if the alternative is between the last two phrases, or between the last phrase and all the proceeding phrases.

In claim 7, "said primary computational unit" has no antecedent basis in the claims.

In claim 8, "the respective autonomous control algorithms", and "the respective physical quantities" have no antecedent basis in the claims. In claims 8 and 9, "a type 1 servo system" is indefinite and undefined. In claim 8, "any reference value" is vague and indefinite.

In claim 9, "applying either ... Gaussion theory or the linear quadratic ..." is alternative and indefinite. In claim 9, "the autonomous control algorithms" and "the respective autonomous control algorithms" have no antecedent basis in the claims.

Each place in the claims that refer to equations by number is improper and indefinite, since the equations are not clearly identified by number in the claims and, in many cases,

multiple equations are referenced and some of these are not in the base claims of the referencing claim.

In claim 19, "the servo motors", "the rudders", "said servo pulse mixing/switching unit", "said sensors", and "the interrelationship" each has no antecedent basis in the claims.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamane (2004/0075018).

This rejection is made by the best determination possible in view of the numerous indefinite problems listed above. Note that while Yamane apparently fails to disclose the claimed equations, without any variables defined, it is impossible to determine this and the equations are alternative in any case. Yamane discloses an autonomously controlled helicopter that senses the claimed parameters and uses this data to compute flight control signals. See especially Figures 1 and 3, and paragraphs 44, 46, 50, and 53-55.

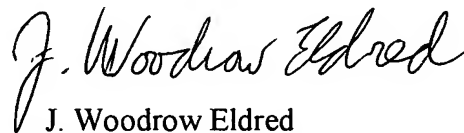
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Swinson et al and Duggan et al are cited as being of interest since they disclose aircraft control systems.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Woodrow Eldred whose telephone number is 703-306-4151. The examiner can normally be reached on Monday to Thursday, from 8:00 a.m. to 5:30 p.m..

Art Unit: 3644

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 703-305-7421. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Woodrow Eldred  
Primary Examiner  
Art Unit 3644

JWE